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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,045	11/18/2003	Daniel J. Weyers	GEM 0230PA	1044

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EXAMINER

RAMIREZ, JOHN FERNANDO

ART UNIT	PAPER NUMBER
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3737

MAIL DATE	DELIVERY MODE
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07/25/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/707,045	Applicant(s) WEYERS ET AL.	
	Examiner JOHN F. RAMIREZ	Art Unit 3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 04/15/08 have been fully considered but they are not persuasive.

With respect to claims 1, 10, 12, 14 and 19 the rejection under 103(a) using Reisker and Petropoulos, applicant alleges on Pages 8 and 9 of the remarks that both of these references use a balun-based cables for driving an imaging coil, whereas applicant's invention is a balun-less drive cables. However, the Reisker reference teaches many different ways to drive the birdcage coil (see different embodiments in col. 9, lines 1-42, col. 10, lines 5-60).

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the plurality of end rings are adapted for being driven via a plurality of balun-less drive) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant alleges that none of the other references cited do not teach or suggest applicants' presently claimed "imaging coil," which includes a "central ring" that is "adapted for being coupled to a ground reference" during operation of the imaging coil. The examiner disagrees with applicant's assertions; the Murphy-Boesch et al. and Srinivasan et al. reference are examples of a dual tuned birdcage resonator for acquiring NMR data images with a central ring as shown in figures 2a and 2b. The Burl

et al. reference teaches a RF birdcage coil for imaging the body with a central ring as shown in figures 2 or 3B.

In regards to the limitation in claims 1, 10, 12, 14 and 19 that the central ring is "adapted for being coupled to a ground reference" during operation of the imaging coil.

It is noted for the record that a recitation with respect to the manner in which an apparatus is intended to be employed does not impose any structural limitation upon the claimed apparatus which differentiates it from a prior art reference disclosing the structural limitations of the claims. *In re Pearson*, 494 F. 2d 1399, 181 USPQ 641 (CCPA 1974); *In re Casey*, 370 F. 2d 576, 152 USPQ 235 (CCPA 1967). Accordingly, since claims 1, 10, 12, 14 and 19 are apparatus claims, and not method claims, the intended use disclosed by the applicant does not provide the necessary patentable weight to overcome the pending rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 7-10, 12-16, 18, and 19-20, 24 and 25 rejected under 35 U.S.C.

103(a) as being unpatentable over **Reisker et al. (US 6,344,745) in view of Murphy-Boesch et al. (US 5,194,811) or Srinivasan et al. (US 5,202,635) or Petropoulos et al. (US 6,788,058).**

Reisker et al. teaches all the limitations of the claimed subject matter except for mentioning specifically an imaging coil comprising: a central ring substantially centered around the axis so as to be parallel to and situated between the end rings; and a plurality of legs coupled between the pair of end rings and the central ring; wherein each of the end rings has a radius that is at least 1.0 cm greater than the radius of the central ring, and the central ring is adapted for being coupled to a ground reference during operation of the imaging coil. However, an imaging coil comprising a circumferentially conductive center ring extending parallel to and coupled between the plurality of end rings is considered conventional in the art as evidenced by the teachings of Murphy-Boesch et al. (US 5,194,811) or Srinivasan et al. (US 5,202,635) or Petropoulos et al. (US 6,788,058).

The Murphy-Boesch et al. and the Srinivasan et al. patent teaches a central ring substantially centered around the axis so as to be parallel to and situated between the end rings (see figures 2a and 2b); and a plurality of legs coupled between the pair of end rings and the central ring (see figures 2a and 2b).

In relation to **claims 3-5**, wherein each of the end rings has a radius that is at least 1.0 cm greater than the radius of the central ring, wherein each radius of the end rings is within a range defined from 30.5cm and to 32.5cm, and wherein the radius of the central ring is less than 31.5 cm are a design consideration within the skill of the art. A change in the size of a prior art device is merely a design choice. In re Rose, 220 F. 2d 459, 105 USPQ 237 (CCPA 1955).

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Based on the above observations, for a person of ordinary skill in the art, modifying the coil system disclosed by Reisker et al., with the above discussed enhancements would have been considered obvious because such modifications would have improved capacitance, homogeneity and simultaneously, high signal to noise ratio performance of birdcage coils, resulting in better image quality.

Claims 6, 11, 17, and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Reisker et al. (US 6,344,745)** in view of **Murphy-Boesch et al. (US 5,194,811)** or **Srinivasan et al. (US 5,202,635)** or **Petropoulos et al. (US 6,788,058)** or **Burl et al. (US 6,396,271)**.

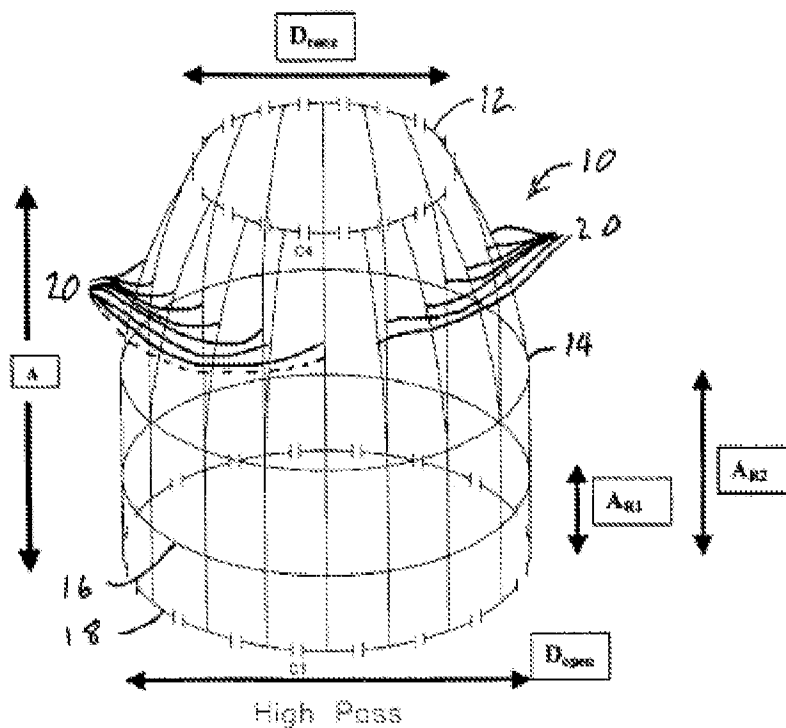


Figure 1

Reisker et al. teaches all the limitations of the claimed subject matter except for mentioning specifically an imaging coil comprising a plurality of capacitors have low impedance at frequency levels of at least 120MHz, wherein the end rings are closer to the radio frequency shield than the at least one center ring, and wherein the end rings are farther away from the patient bore than the at least one center ring.

However, an imaging coil comprising a plurality of capacitors have low impedance at frequency levels of at least 120MHz, wherein the end rings are closer to the radio frequency shield than the at least one center ring, and wherein the end rings are farther away from the patient bore than the at least one center ring are considered conventional in the art as evidenced by the teachings of Burl et al. and Petropoulos et al.

The Petropoulos et al. patent teaches plurality of capacitors have low impedance at frequency levels of at least 120MHz (see fig.10, C1, C4; col. 2 lines 1-41), wherein the end rings are closer to the radio frequency shield than the at least one center ring (see figures 1 and 4), and wherein the end rings are farther away from the patient bore than the at least one center ring (see figures 1-10). Moreover, Burl et al. teaches plurality of capacitors have low impedance at frequency levels of at least 120MHz (col. 5, lines 35-51).

Additionally, the limitations in which the end rings are closer to the radio frequency shield than the at least one center ring, and wherein the end rings are farther away from the patient bore than the at least one center ring are a change

in the shape of a prior art device, therefore is a design consideration within the skill of the art. In re Dailey, 357 F. 2d 669, 149 USPQ 47 (CCPA 1966).

Based on the above observations, for a person of ordinary skill in the art, modifying the coil system disclosed by Reisker et al., with the above discussed enhancements would have been considered obvious because such modifications would have improved capacitance, homogeneity and simultaneously, high signal to noise ratio performance of birdcage coils, resulting in better image quality.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN F. RAMIREZ whose telephone number is (571)272-8685. The examiner can normally be reached on (Mon-Fri) 7:00 - 3:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian L. Casler can be reached on (571) 272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brian L Casler/
Supervisory Patent Examiner, Art
Unit 3737

/J. F. R./
Examiner, Art Unit 3737